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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,891	08/23/2001	Nobuo Sasaki	SCEI 3.0-081	1355

530 7590 09/13/2005

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EXAMINER

RAHMJOO, MANUCHER

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,891

Applicant(s)

SASAKI ET AL

Examiner

Mike Rahmjoo

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3- 7, 9-13, 15-20, 33, 36, and 39- 41 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 3- 7, 9-13, 15-20, 33, 36, and 39- 41 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3- 7, 9-13,15-20, 33, 36, and 39- 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoi et al, US Patent 6,683,617, hereinafter, Naoi in view of Marugame 5,995,649.

As per claims 1, 7, 13, 19- 20, 33, and 36 Naoi teaches determining that a given line part of an object depicted in a three dimensional image is a visually important line part and for extracting only data representing the visually important line part, the visually important line part being a contour line of the depicted object or a contour candidate line of the depicted object, or visually important portion from data representing the three dimensional image see for example block 32 (subline segmenting unit 32) of fig 1 and column 6 lines 4- 9 and lines 24- 30; and an image rendering means for rendering the three dimensional image see for example unit 4 of fig 1 and figure 3 for a candidate of the depicted object ; and antialiasing means for

antialiasing only the extracted data to form an antialiased image portion associated with the visually important line part see for example the abstract and column 11 lines 40- 50; and overwriting means for overwriting only the antialiased image portion onto a corresponding portion of the rendered image see for example figure 7 block 105; and inherently teaches a computer readable storage medium (memory and HD) for storing a computer program for operating an apparatus to perform an image rendering method and distribution means (FD or CD) for distributing the computer program stored on the computer readable storage medium see for example the image processing apparatus of claim 1.

However, Naoi does not teach extracting means.

Marugame teaches extracting means see for example figure 4 and column 19 lines 49- 65 through column 20 lines 1- 7 for the reference point (corresponding to the visually important line part see for example column 19 lines 55- 60) extraction portion 40.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Marugame into Naoi to extract an object image or part therefrom from input images so as to perform further processing on the extracted object image or part therefrom and therefore enhance the performance of the device see for example column 3 lines 1- 65.

As per claims 3,9, and 15 Naoi teaches said image rendering means renders the three-dimensional image using polygon data that represents the three-dimensional image see for example unit 4 of figure 1, and said extracting means extracts only the

data representing the visually important line part by extracting corresponding data from the polygon data being selected from the group consisting of line data, curve data and line strip data see for example block 32 of figure 1.

As per claims 4,10, and 16 Naoi teaches the visually important line part passes through a plurality of pixels (see for example figures 2- 6 through the passage of sublines 1- 4 through the subpixels), and said antialiasing means generates pixel values for each of the plurality of pixels as a function of an occupancy value of that pixel (see for example column 6 lines 46- 51 which shows pixel values as a function of subpixels), the occupancy value of a respective pixel being based on a ratio of an area of an occupied portion of the pixel to an area of the pixel (see for example figures 6a- c with each having a certain ratio with associated percentage of occupancy), the area of the occupied portion of the pixel (see for example column 7 lines 18- 31) being based on an area occupied by a portion of the visually important line part that passes through the pixel when the visually important line part is a straight line or being based on an area occupied by an ideal straight line segment which approximates the portion of the visually important line part when the visually important line part is curved.

As per claims 5,11, and 17 Naoi teaches the portion of the visually important line part or the ideal straight-line segment forms an angle with an X-axis, and said antialiasing means antialiases a range of pixels along the X-axis when the angle is equal to or larger than a predetermined value; and antialiases a range of pixels, along a Y axis that is orthogonal to the X-axis when the angle is smaller than the predetermined value see for example figures 2- 6 and also polygon 2 regions A and B of figure 3 which

has representations of X and Y coordinates through each subpixel further making corresponding angles with said axis.

As per claims 6, 12, and 18 Naoi teaches each of the plurality of pixels is divided into a matrix of sub-pixels, and said antialiasing means determines the area of the occupied portion of the pixel in units of sub-pixel- areas see for example figures 2- 6.

Response to Arguments

Applicant's arguments filed 08/23/2005 have been fully considered but they are not persuasive.

As per applicant's remarks on pages 12- 15, applicant argues "the Marugame patent, however, is concerned with extracting the entire image of a specific object from among input images" and concludes "the patent therefore does not disclose or suggest extracting (as well as anti- aliasing and overwriting) only data representing the visually important line part".

Examiner respectfully disagrees.

Marugame teaches "an image pickup portion 10 (broadly corresponding to a visually important line part or contour candidate line) to take in an image of an object, an image accumulating portion 20 that accumulates images taken by the image pickup portion 10, a parameter calculating portion 30 that analyzes images of a reference solid and calculates parameters necessary for multiple image processing, a reference point extracting portion 40 (broadly corresponding to a visually important line part or contour candidate line) that extracts a reference point to be used in object extraction from images taken by the image

pickup portion 10, a corresponding point detecting portion 50 (broadly corresponding to a visually important line part or contour candidate line) that detects a corresponding point in plural images captured by the image pickup portion 10, a three dimensional coordinates value calculating portion 60 that calculates a three dimensional coordinates value of an object in an image, a contour point extracting portion 70 (broadly corresponding to a visually important line part or contour candidate line) that extracts a contour point to form a contour of an object in images, an object display control portion 80 (broadly corresponding to a visually important line part or contour candidate line) that displays the object portion extracted from input image 80 in an image, and in addition, a noise judging portion 150 (broadly corresponding to a visually important line part or contour candidate line) that detects noise among the contour points extracted by the contour point extracting portion 70, and a contour smoothing processing portion 160 that corrects the portion which is judged as noise by the noise judging portion 150" see for example column 19 lines 49- 65 through column 20 lines 1- 7. Also as to the broadest reasonable interpretation by examiner, a given line part of an object can correspond to the entire image.

Inquiry

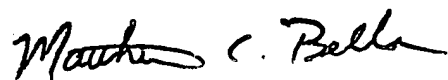
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is (571) 272-7789. The examiner can normally be reached on 6:30- 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272- 7778. The fax phone number for the organization where this application or proceeding is assigned is (571) 273- 8300 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Mike Rahmjoo

August 31, 2005



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600